

LADWP GREEN POWER PROGRAM

INTRODUCTION

The Los Angeles Department of Water and Power (DWP), as the power provider for the City of Los Angeles, is offering its customers a comprehensive “green” power program¹ (hereinafter, referred to as *Green Power Program*). Our customers can choose cleaner power sources, which if efficiently used, can save money and the environment.

DWP has the unique ability to: provide electric service at cost; make significant contributions to clean air in the Los Angeles Basin; promote clean industry; and create new jobs while leading the advance of the new environmentally responsible ethic that is essential if our high energy civilization is to survive and thrive. The *Green Power Program* is also a means to reduce the threat of global warming by bringing renewable, non-polluting energy on to the DWP power grid.

The *Green Power Program* is part of a larger effort by DWP to make LA a far better community in the 21st Century. DWP’s mission is: to bring zero emission electric cars and busses to the streets of LA; to introduce clean quiet electric leaf blowers and lawn mowers to our neighborhoods; to plant trees to cool our schools and communities; and to provide a safe and plentiful supply of water. All of the above elements are part of DWP’s new focus on “coming clean” for the new Millennium.

The *Green Power Program* will be a voluntary program, consisting of two components:

- a) *The Green Plan*: Customers can chose to support the development and deployment of new green power resources for 20% of their power or more if they wish. New renewable resources will generate the “green power.”
- b) *Pure Solar Plan*: This option will be available for customers who wish to own and install photovoltaic (PV) systems on their property. DWP will buy-down the cost of PV installations – for the first 1,000 customers – and assist the customers in installing conservation measures to reduce their overall energy demand and make PV systems a viable alternative for DWP customers.

Program Background

DWP is not just another utility pitching a green power program. It is the beginning of a fundamental shift in DWP power sources away from fossil fuels and nuclear power towards cleaner energy. The program will further the goal of creating a sustainable community and a more prosperous Los Angeles. The *Green Power Program* is part of our effort, in Los Angeles, that will fundamentally affect the way people view and use resources. The *Green Power Program* provides the unique ability to save money over time while creating a cleaner metropolis.

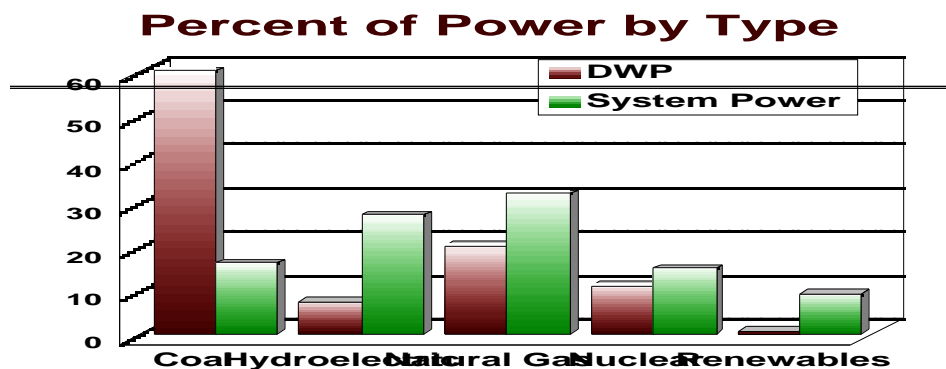
DWP is staking out a leadership role in the deployment, commercialization, and utilization of the technologies of the future. It is our belief that leading the way towards small-scale, decentralized, cleaner energy sources is just as important in the new millenium as building central power stations was in the 1970s. We will build these power sources of the future, at the load, where they are needed and create new jobs in the process.

¹ Green power comes from many sources. Wind power converts the power in moving air to electricity, producing no air emissions, solid, waste or wastewater. Solar power captures the heat and light of the sun to generate electricity or heat water. Like wind, solar power produces no air emissions, solid waste, or wastewater. Small-scale hydroelectric power (up to 30 megawatts) captures energy available in falling water. Green sources that can be used for firming and shaping power include fuel cells, micro turbines, and conventional boilers powered by biomass or recovered process gases.

The *Green Power Program* is also about customer choice. Choosing where one's energy comes from is a significant customer opportunity and we intend to empower our customers to have a role in determining the resource mix for their power by through the *Green Power Program*. All of Los Angeles will reap the benefits as a result of cleaner air, more reliable power, and economic development.

Diversify Power Resources

A major reason for the *Green Power Program* is that DWP needs to diversify its fuel mix with cleaner resources. Today 60% of our electricity is generated by coal – the “dirtiest” fossil fuel as well as the largest source of carbon dioxide emissions, which are at the heart of Global Warming concerns. The *Green Power Program* will gradually move DWP away from its existing power supply, which is dependent on coal and produces 75% more CO₂ per kWh than the average of California's system power. By using this cleaner electricity more efficiently, DWP customers will have lower bills, especially in the years ahead. The price of fossil fuels tends to rise over time, while the sun shines every day at zero cost for the fuel. Figure 1 shows DWP's energy mix compared to “System Power” as defined by the California Energy Commission (CEC). The figure illustrates how DWP lags behind System Power in clean energy and exceeds the averages for coal.



Under uniform disclosure rules, being considered by federal legislation, DWP would be classified as a “non green” company. We can and will do better in the future.

Customers Seek Environmental Benefits

Historically, price and quality have been the primary criteria in customer purchase decisions and though customers state that environment-related attributes are important, they have been unwilling to pay for them. In the past few years, however, things have begun to change. Today, “softer” issues such as environmental friendliness are proving to be the tiebreaker for otherwise indistinguishable products and services. Companies in various industries are responding to this consumer trend. In fact, one in nine new products is being marketed as possessing some form of environmental benefit².

Recent marketing research studies indicate that when given a choice, 20% of consumers will pay premiums of up to 10% for environmentally clean energy³. The *Green Power Program* is designed to assure we capture the green market, which may well be all of our customers. We intend to produce and market electricity in a more environmentally friendly manner in the future.

² “The Environment: It’s Not the Time to Relax,” *McKinsey Quarterly* 1995 (4).

³ Based on a survey of 25,000 customers in Massachusetts, New York, Ohio, New Hampshire conducted by Xenergy. Note, however, that various studies differ in their estimates of consumers’ willingness to pay extra for green power. Thus, Edison data indicates that it is unlikely that more than 5% of consumers will pay extra for clean power, whereas PG&E expects the number of consumers willing to pay extra for green power to be higher than 20%.

Business Interest of Commercial Customers

The overall goal for the *Green Power Program* is widespread participation with a small commitment by each consumer. DWP's commercial and industrial customers also have an incentive to sign up for the *Green Power Program* and brand themselves as environmentally aware corporate citizens. We will, therefore, offer our commercial and industrial customers the option to participate in the *Green Power Program* by spending 3 to 10 dollars per month on green power. Commercial and industrial customers will also be offered assistance on energy efficiency measures to offset or more than offset the extra cost of the green power.

Economic Development, Self Sufficiency, and Reliability

Attracting new businesses to Los Angeles related to the Green Power Program will provide jobs from the new industries it will attract and economic benefits for the community at large. The Green Power Plan can also provide a significant source of inflation resistant power supply that is not dependent on foreign oil and fluctuations in commodity prices. The fuel cost of wind and solar power will always be zero. As growing economies continue to develop, and the threat of Global Warming escalates, the value of energy independent from fossil fuels will increase and provide economic advantage to those who use it. The *Green Power Program* will also lead to improved reliability of the LA power grid by supplying power close to the load.

DWP Green Power Industrial Park

DWP will create incentives for the providers of green power and efficient products to locate manufacturing or assembly facilities in a specified location (empowerment, brownfield and/or enterprise zone) within the city limits of LA. In addition to city, state and federal programs for revitalizing inner-city communities, DWP will provide incentives in the form of low-cost hydropower for manufacturers to locate to the DWP *Green Power Industrial Park*. The block (200 MW) of low-cost power will be available for the first three years of operation of relocated new businesses or major expansion of existing operations. The power will be auctioned off on an annual basis to the manufacturers providing most jobs per kWh of low-cost electricity. The *Green Power Industrial Park* will be an effective vehicle for bringing new attractive jobs to repressed city areas, revitalizing business in LA and cleaning up the environment.

PROGRAM DESCRIPTION

The Green Power Program will consist of two components: The *Green Plan* and *Pure Solar Plan*

The Green Plan is the flagship green power program. The plan will assure that a part (20%) of a customer's monthly usage will come from newly constructed renewable (green) energy sources, thus supporting the development and deployment of green power resources in the Los Angeles area. Consumers who chose to enroll in the *Green Power Plan* will pay a premium for the portion of the consumed energy that comes from green sources. The amount of the premium will be a function of consumers' total utility bill and will vary from \$2 to \$5. In addition, consumers will be offered *Green Rewards*: for each dollar spent on their electric bill, customers enrolled in the *Green Power Plan* will receive points redeemable toward the purchase of energy efficient appliances. Using energy-efficient appliances will provide customers with savings that will more than offset their participation in the *Green Power Plan* (Exhibit A). *The Pure Solar Plan* is DWP's contribution to deployment of photovoltaic (PV) systems for residential customers. DWP will subsidize the construction of rooftop solar systems for the first 1,000 customers that sign up. The subsidy will be designed to make the installation a reasonable option for the customer at a cost premium of no more than 20%.

The Pure Solar Plan will continue to subsidize rooftop solar installations at a lower and lower rate in the years ahead, until the systems become an economic alternative. With the help of mass purchasing, the price of PV modules is expected to drop dramatically in two to three years. As prices fall, so will the amount of the DWP subsidy required to make the systems a cost-effective alternative. The subsidy will be made available through our Public Benefits money. It is expected that no subsidy will be required after 2002. Additionally, DWP will seek to support the cost of this program through federal and state incentive programs, as well as partnering with banks to provide low interest, low cost home refinancing to program participants.

DWP's purchase of PV systems will be predicated on the location of a solar factory in LA as part of our commitment to launch a new industry in our service territory and create new jobs. The

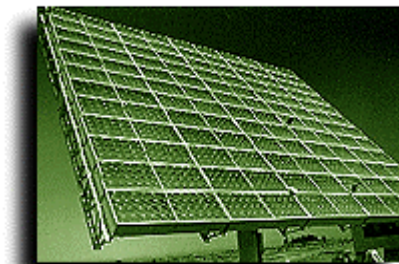
Pure Solar Plan is designed to facilitate the installation of the equivalent of 2 kW solar systems on 100,000 roofs in the LA area by the year 2010.

Generation Mix

Initially, DWP foresees the generation mix will consist of 10% solar and 90% wind power, unless bidders offer better sources that originate locally. The green power rate will be based on the actual cost less any available public benefit or other non-price ratepayer funding. The expected cost to participants is about \$2 to \$5 extra per month, based on average monthly usage of 470 kWh, offset by energy efficiency measures.

We will entertain bids for the siting of solar power installations or a solar manufacturing facility on empowerment, enterprise and/or potential brownfield sites in the Los Angeles Area, where the cost of the PV systems may be offset by savings in clean-up requirements and economic development incentives. In addition, the development of such project will provide a positive use for sites that may be sources for neighborhood eyesores and bring new jobs to the area.

Neighborhood Solar



In addition to the Pure Solar Plan, there will be an opportunity for customers of multifamily dwellings, renters and those whose roofs are not suitable for direct PV installations, to participate in the funding of a neighborhood solar power, by paying for it through the green rate. The program envisions that PV systems of 100 - 200 kW would be installed in the city of LA (possibly on DWP property, parking structures, public buildings, or LA brownfield sites). The price of the solar power will not include the competition transition charge (CTC) during the CTC payoff period because it is the functional equivalent of a conservation

measure. Once the total installed capacity of neighborhood solar power exceeds 10 MW, DWP will add the CTC to the rate, if it is still applicable.

Solar Hot Water Heaters

Solar Hot Water Heaters could potentially have considerable market penetration in the LA area, especially in areas where there is no freezing and simple, low-cost technology can be utilized. Such systems enjoy widespread use in Israel and elsewhere and represent a large opportunity for low cost use of solar energy. The technology is particularly economic for customer's whose water is heated by electricity. DWP will invite bids for creating a large-scale market for cost-effective solar hot-water-heaters in its service territory. If we can receive a low enough cost it can be made an important component of the *Green Power Program*.

Wind Power



DWP will initially procure up to 20 MW of wind power to seed the Green Power Program, contingent on signing up the first 20,000 customers.

A three-year contract for new wind power will cost DWP approximately 5 cents per kWh wholesale, not including transmission and distribution. CTC charges will apply to this portion of the program because the turbines, while located in Southern California, will be some distance from the load and therefore should be treated as a generation source.

There are many other types of green power such as biomass and landfill gas recovery, etc. DWP intends to actively pursue additional green power resources and will welcome bids identifying additional green resources.

Action Plan

This report is part of a request for bidders to offer DWP new green power resources and solar water-heaters, which will become an integral part of DWP's Green Power Program.

The price of green power will include any transmission and distribution costs for resources that are grid connected (except for the initial 10MW of solar power). Green Power Plan customers' rates will be reduced when the CTC is paid off in 2002.

Program materials will reflect input from the public and environmental leaders. We will try our best to make materials easy to understand, and will clearly indicate the specific contributions of each customer to the environment. The program will be designed to allow significant environmental benefit at low to no cost for each customer. To achieve that goal we will choose the most cost-effective green technologies available for development. While 20% will be the minimum amount necessary for a residential customer and three to ten dollars per month will be the minimum for commercial and industrial customers to qualify as green rate participants, DWP consumers will be able to purchase up to 100% of their power from green resources if they choose to do so.